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AUTHOR Bickford, J. Albert
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ABSTRACT

A study of dialectal variation in Mexican Sign Language (MSL), the primary language for a large segment of Mexico's deaf community, is presented. Signs used by nine different sources representing various locations, ages, and social groups are compared. The first section reviews a number of previous informal assessments of dialectal variation in MSL. The second section describes the study, in which individuals in five locations (two in Hermosillo, one in Cuernavaca, and two in Mexico City) were asked to provide signs for words from a list of 100. In addition, four published signing dictionaries were consulted. Identical, similar, and variant signs were then analyzed and compared with a similar analysis of the same 100 words with native English-speakers from the United States with different accents. Results are interpreted in the third section. It is concluded that the majority of the evidence suggests MSL is a single language, at least for the signers and dictionaries sampled. The moderate amount of dialectal variation is seen as not hindering effective communication. Further research on mutual intelligibility is recommended. The greatest variation appeared in the Monterrey dialect sample; explanations are offered. Implications of the findings for language planning are discussed. (MSE)

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LEXICAL VARIATION IN MEXICAN SIGN LANGUAGE

J. Albert Bickford

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Mexican Sign Language (MSL) is the primary language used throughout Mexico among a large segment of the deaf population, especially in towns and cities.[1] This study represents a preliminary attempt to determine the amount of dialectal variation in MSL, primarily by means of a comparison of the signs used by nine different sources representing various locations, ages, and social groupings. It is offered in the hopes that it will be of use not only to linguists, but also educators and social service agencies, both in Mexico and the United States of America. There is considerable uncertainty about this matter among professionals who work with the deaf, and many are very interested in more accurate information than is currently available.[2]

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[1]Smith-Stark (1986) provides a very rough estimate that there are approximately 87,000 deaf people who use MSL. More accurate figures are unavailable. Although some deaf people are well-educated and thoroughly bilingual in Spanish (at least reading and writing), a large segment of the MSL population appears to be essentially monolingual. Deaf people generally refer to themselves in Spanish as *sordomudos* 'deaf-mutes' or *silentes* 'silent ones'. There is no standard Spanish name for MSL; some labels in use are El Lenguaje Manual (de México), El Lenguaje de Señas Mexicanas, or simply La Mímica (signing) or "hablar con manos" (speaking with the hands).

[2]Those who are most interested in this information are also those who have contributed much to compiling it. None of this would have been possible without the assistance of numerous people. I hope that I have included a complete list here, but I fear I may have forgotten someone.

Irma Bernal, of the Dirección General de Educación Especial, Hermosillo, Sonora.
Victor Blanco M. of the school of Audición y Lenguaje, Hermosillo, Sonora.
Padre Anival Carvallo and others at the Church of San Hipólito, Mexico City.
Eugene Casad, Martin Culy, John Daly, Kathryn Farris, Barbara Grimes, Bob Goerz, Barbara Hollenbach, Bruce Hollenbach, John Lind, Ron Newberg, and Sharon Stoltzfus, of the Summer Institute of Linguistics.
Helene Cohen, of Pima Community College, Tucson AZ.

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Although this study does not come close to covering all of Mexico, or even all social and age groupings in any location, it does give some idea as to the range of variation that is typical. The nature and extent of variation is described informally in section 1, and in section 2 it is shown to be relatively small, at least in terms of its vocabulary. Thus, there is a reasonable probability that MSL is indeed a single language, as discussed in section 3. To be certain, further testing of a different sort will be needed, but for now it seems best to emphasize the similarities within MSL, foster interaction and increased communication between different segments of the deaf community, and avoid actions that would tend to divide it or give the appearance that it is seriously divided linguistically. Specific recommendations along this line are given in section 4.

1 INFORMAL ASSESSMENTS OF DIALECTAL VARIATION

There is considerable confusion as to whether MSL should be considered a single language, a cluster of closely-related languages, or not a language at all. Deaf people themselves, and hearing people who have learned MSL, feel strongly that MSL is a single language, since they have little or no difficulty communicating throughout the country. Although there are differences, they are considered minor and unimportant (with only occasional exceptions). However, when attempts have been made to define exactly what the language is, such as compiling a dictionary or developing materials to teach MSL in the USA, many have reported finding sharp disagreements between deaf people as to the "proper" way to sign. Those who do not know MSL tend to interpret these disagreements as indicating that MSL is not a unified

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Isabel Farha, Esther Marmolejo, Luz Marina Pedraza, Emilia Adame Chavez, Gloria Arango, and others (whose names I unfortunately never learned) at the Dirección General de Educación Especial of the Secretaría de Educación Pública.

Boris Fridman, of the Escuela Nacional de Antropología e Historia, Mexico City.

Peggy Harmon, of the Community Outreach Program for the Deaf, Tucson AZ.

Bob Johnson and Eli Savanick, of Gallaudet University, Washington DC.

Annette Long, of the University of Arizona, Tucson.

Eduardo Montes B. Oca and others at the Instituto Nacional de la Comunicación Humana, Mexico City.

Carol Padden, Patricia Sieglen, and Tom Galey of Deaf Community Services of San Diego.

Thomas Smith-Stark, of the Colegio de México, Mexico City.

Valerie Sutton, of the Center for Sutton Movement Writing.

Karen van Hoek and Ursula Bellugi of the Salk Institute, La Jolla CA.

Eugene and Linda Gehm, Ronald Henson, Donna Jackson Maldonado, Margarita Marquez, and Joseph Mortland.

In addition, there are many deaf Mexicans who provided invaluable practical assistance as well as much of the information in this paper. For the sake of their privacy, I have not acknowledged most of them by name, but my gratitude is no less great even though it is withheld from public view. My friends, thank you!

Anyone with further questions or information on this subject is encouraged to contact me at Box 8907 CRB, Tucson AZ 85738, USA, (602) 825-1229 during August-May, and at Box 8217 University Station, Grand Forks ND 58202, USA during June and July.

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language. They are tempted to think of it as a helter-skelter collection of dialects, and some even question whether it is a language at all.

This difference of opinion has been noted especially by Parra and Parra (1986:iii) and by staff members at Deaf Community Services of San Diego (personal communication). I have also observed it directly in my discussions with people in and out of Mexico; deaf people feel strongly that MSL is one language, while educators and service providers are bewildered by the differences and disagreements they find.

There is no question that there are differences between signers. At least for a linguist, this is not surprising either. Dialectal and individual variation is normal in spoken languages; there is no reason to think it would be any different for signed languages. The only significant question is whether there is enough variation to classify the different dialects as belonging to the same or separate languages.

Further, just because complete uniformity is not readily apparent does not mean that there is no language at all or only a primitive one; the existence and maturity of a language can only be judged by a careful linguistic investigation, which to this point has not been undertaken. However, Jackson Maldonado (1981) has demonstrated that MSL has all the characteristics that linguists have come to expect of spoken languages. Bob Johnson (personal communication) reports that, based on brief contacts with signers in Mérida, Yucatán, he observed several structural characteristics which also normally occur in other mature sign languages (as opposed to home sign systems or signed versions of spoken languages). Boris Fridman (personal communication) has found considerable structural regularity in the basic elements used to construct signs (analogous to the sounds of an oral language). My own observations of deaf people in Mexico and the way they relate to each other in large groups also leaves me with no doubt that MSL is a genuine, well-established linguistic system; the extent of interaction I observed would not be possible if it were not. And, the data in this study also demonstrates that there is a large core of basic vocabulary that is in use, with only minor variations, by all the sources I consulted.

Therefore, we need not consider further whether MSL is a real language, or whether there is dialectal variation. Instead, the important questions that must be addressed include the following:

1. How much variation is there from one dialect of MSL to the other?
2. Is it great enough to consider them to be different languages, or just different dialects of the same language?
3. What sociological factors are important in defining dialect boundaries?

I address the first two questions, at least from the point of view of the lexicon (i.e. the vocabulary of signs used in MSL), in section 2. For the moment, I turn to the third.

Only a much more extensive study would be able to define dialect boundaries precisely. However, based on informal observations made by signers and others in close contact with the deaf community, it seems that the major factors defining dialect boundaries are location, age, and religion.

One man in Mexico City, about 60 years old, noted that he often has trouble communicating with people in their teens and early twenties. Conversations were possible only if both people were willing to make an effort to communicate. His hearing son, who is in his mid-twenties and also knows MSL, reports the same problems; he can only communicate well with his father's friends. The father also noted that there were smaller differences between his generation and signers in their 20s, 30s, and 40s. He attributed this to the fact that in recent years deaf people have not had the opportunity to receive an education in MSL. Oralism has been the dominant philosophy in deaf education in Mexico since the Escuela Nacional de Sordomudos (National School for the Deaf) was closed.[3] He felt there were greater differences within Mexico City than between him and other places in the Republic; elsewhere even the younger people have apparently retained the more traditional dialect that was taught in the Escuela Nacional. He normally has no trouble communicating outside Mexico City; however he did admit that he had trouble following conversations that he was not participating in ("They sign too fast.")

Joseph Mortland (personal communication) distinguishes the same three dialects in Mexico City according to age: the traditional signing of people in their 40s and above, the somewhat more innovative signing of young adults, and a "street slang" which is used mostly by teenagers and is especially distinguished by its greater use of profanity.

Eugene and Linda Gehm (personal communication) report that there were differences, at least in theological terminology, between the Baptist congregation in Mexico City and the Catholic community associated with the Church of San Hipólito.[4] In many cases these signs are obviously derived from basic theological disagreements between the groups. For

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[3]I have not been able to determine the exact date when the school closed. The source here claimed it was 1952 or 1953; Smith-Stark (1986) however reports a source who gave a date ten years later.

[4]The Baptist church is located at 51 Miguel Alemán, between Cardenas and Dr. Vertiz, in Mexico City (near Metro Cárdenas). Mortland founded this church, but has since turned the leadership of it over to a deaf Mexican pastor. Approximately 50 people, all deaf, were in attendance the day I visited.

The Catholic church of San Hipólito is located at the corner of Hidalgo and Reforma near downtown Mexico City and the Alameda, at Metro Hidalgo. One mass each week is interpreted in MSL for the deaf parishioners.

example, the Catholic sign for "baptize" is based on pouring water on a person's head, while the Baptist word is based on immersion.[5]

To some extent, age and religious boundaries may reinforce each other. Although there are some younger people in attendance at San Hipólito, most of the approximately 200 people who attend mass and Sunday School there are middle aged or older. The Baptist congregation, on the other hand, consists entirely of young families and singles in their twenties. There used to be some older members, but they withdrew recently to begin a new congregation. Teenagers seem to have relatively little interest in either congregation. This is evidenced by Mortland's mention of profanity in connection with the teenage dialect, and by a complaint by one of the members at San Hipólito that many of the people who congregate outside the church on Sunday morning do not attend mass; there were significantly more teens and young adults in this group than there were inside the church.

One final set of facts needs to be reported, although they are difficult to interpret. Smith-Stark (1986) and Parra and Parra (1987) note that there was a five-minute daily news broadcast in MSL over XEW television (channel 2) in Mexico City. However, several deaf people reported to me that they could not understand it. This may have been due to dialectal differences or to the content of the broadcast, which was probably unfamiliar to many in the deaf community because of their minimal educational opportunities (Smith-Stark, personal communication). The program went off the air in 1988, although XEW has continued to broadcast occasional programs about deaf people which try to promote understanding about MSL to the hearing population, and programs with interpretation in MSL.

2 LEXICAL COMPARISON

As helpful as they may be for general orientation to the problem, informal assessments of dialectal variation are often difficult to interpret, and do not give precise results. For this reason, I gathered data to make a detailed comparison of the signs used in different dialects. This technique of collecting wordlists is generally the first step in a survey of dialect variation, since it can be done with relatively little effort compared to other methods, and is usually necessary before other methods can be applied.

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[5] As Bob Dooley has pointed out, the two words for "baptize" are probably better analyzed as having different meanings, although they have the same Spanish translation. Each group's word for "baptize" reflects its own religious practices. It is not known if all dialect differences based on religious preference are of this nature, or what words are used by people with no particular religious affiliation. Even if they are, the practical result is the same; the two groups would have difficulty using the same written or videotaped materials if such words needed to be used.

2.1 Sources and methodology

The sources of my data for lexical comparison were of two types: wordlists obtained directly from native signers, and published dictionaries.

Standard wordlists are normally used to help establish whether two dialects represent the same or different languages. The most famous are those compiled by Morris Swadesh (1950, 1954, 1955). These lists, designed for spoken languages, are inadequate for sign language research, since they contain a great deal of vocabulary that is highly motivated semantically, i.e. it is easily pictured on the hands. Pronouns and body parts, which often make up a large part of such lists, are especially problematic in this regard, since in most sign languages these words are produced simply by pointing. If two forms of signing have the same sign for such words, this tells us nothing about whether they are the same language. I therefore compiled my own wordlist (see the appendix), which omits pronouns, body parts, and other problematic words, and includes more abstract terminology than would normally be used in a dialect survey of spoken languages.

Using this list of approximately 100 words, data was collected from five different sources: two in Hermosillo (Sonora), another in Cuernavaca (1 hour south of Mexico City), and two in Mexico City itself. Spanish words were presented in writing to one or more deaf persons, who then demonstrated the corresponding sign. Each sign was transcribed phonetically, using a writing system based on one being developed for American Sign Language (ASL) by The Center for Sutton Movement Writing.[6] Some minor modifications and extensions to the Sutton system were necessary because of differences between ASL and MSL.

In Hermosillo, 66 words were collected from a group of three people, one man and two women, in their early twenties. As they did not have time to work with me further, the rest of the words were collected from the novio (i.e. boyfriend or fiance) of one of the women. Since he was originally from Mexico City, I have distinguished the two sources as HMO (native Hermosillo) and H/MX (Hermosillo with background in Mexico City). Religious affiliation is unknown, but probably unimportant, as there are apparently no deaf churches in Hermosillo (Irma Bernal, personal communication).

In Cuernavaca, my source was a woman, approximately 30 years old, a Catholic from a hearing family, whose husband is a recent Protestant convert.

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[6]An early version of this writing system is used in public schools in Denmark, and efforts are under way to refine it so that it represents only those linguistic details necessary for communication. A quarterly newspaper in ASL and English was previously published using it, and publication has just been resumed. Software is available for producing this script on Apple II, MacIntosh, and IBM PC compatible computers. The address for the Center for Sutton Movement Writing is PO Box 517, La Jolla CA 92038-0517, USA.

In Mexico City, one source was a man, approximately 60 years old, religious affiliation unknown. The other was a man, approximately 30 years old, and a prominent leader in the Baptist church.

In addition, four published dictionaries were available.[7] All four transcribe signs using drawings, and provide a brief gloss in Spanish. The words in the wordlist were sought in each dictionary, and the drawings were retranscribed using the same phonetic system as the wordlists. Not all words were available in every dictionary, of course; the exact number available in each is reported in the bottom row of Table 1.

Two volumes entitled *Mis Primeras Señas* and *Mis Primeras Señas - 2*, produced by the Dirección General de Educación Especial of the Secretaría de Educación Pública (Directorate of Special Education of the Federal Department of Public Education), are apparently the only published lexical materials that were compiled with the assistance of trained linguists (Donna Jackson Maldonado and Boris Fridman). As there is virtually no overlap in the material in the two volumes, and they are based on the same group of signers, I treat them here as one source, abbreviated MPS. MPS appears to reflect primarily the signing of the older generation, particularly Gustavo Couret and Leonardo Arroche (who are listed as collaborators). Occasionally it lists more than one sign for a given Spanish gloss, something that does not occur in the other sources, reflecting a greater sensitivity to and acceptance of dialect variation. A brief description of the sign, noting handshape, orientation, point of articulation, etc., is also included to clarify the drawings. Together, the two volumes include approximately 500 signs.

Parra and Parra 1986 (PP) includes American Sign Language and English as well as MSL and Spanish, and is offered as an aid in bridging the gap which separates the four languages. The data was collected from various parts of the Republic; where regional differences exist, PP generally gives the most common variant. Brief descriptions of each sign are also included, like those provided by MPS. PP includes approximately 700 signs.

Henson 1983 (HEN) reflects primarily the signing in Monterrey (Ronald Henson, personal communication). It gives diagrams (without descriptions), and Spanish and English glosses. HEN includes more signs than any other source, approximately 1500.

Luna Guzmán and Miranda 1987 (LGM) is the only source compiled entirely by deaf people. It includes diagrams (without descriptions) and Spanish glosses. As the authors have some connection with the deaf community at the Church of San Hipólito, one could assume tentatively

[7] Joseph Mortland (personal communication) reports that a fifth dictionary is due to be published by the Confederación Nacional Deportivo, Cultural, y Recreativo de Silentes de México (Mexican National Deaf Federation for Sports, Culture, and Recreation).

that the book reflects the signing of that community, although this is not certain. LGM includes approximately 1300 signs.

Once the entire wordlist, or as much of it as possible, had been converted to a common writing system, counts were made of the number of similar and identical signs in common between each pair of dialects.

Signs were scored as being similar if they appeared to be cognate. Usually this meant that they differed in only one or two features (handshape and/or orientation, type or location of movement, point of contact, etc). However, a systematic tabulation of regular correspondences was not undertaken; this would be necessary to determine if two forms actually were cognate or just similar by coincidence or borrowing.

Deciding whether two signs were identical was more difficult. One problem was posed by inadequacies of the transcriptions, either due to my mistakes, or difficulties in interpreting diagrams in the dictionaries. Details that were frequently unclear included the following:

Number of repetitions of a movement
Exact path of a movement
Direction of rotation for circular movements
Force, speed, and length of movement
Presence of special facial expressions

In general, I assumed that signs from two sources were identical if the transcription was not clear enough to distinguish them.

Another problem was posed by free variation (minor differences in a sign that make no difference in meaning). Some features that varied freely for a given speaker include the following:

Position of the thumb (extended, alongside other fingers, or tucked into the palm) for many handshapes
Tightness of the fist
Interchanging of left and right hands for ambidextrous signers
Number of repetitions of a movement
Minor differences in hand orientation

Such differences were discounted in determining whether two signs were identical, under the assumption that presence of free variation in preliminary transcriptions tells more about the analyst and what he happens to notice than about the language.

Other features seemed to vary considerably from one speaker to the next, including all the above, plus the following:

Whether terms for males and females were distinguished using the feminine suffix (Parra and Parra 1986:xix, Mis Primera Señas 1983: 24-25)

Differences in the left handshape

Again, these differences were discounted, assuming that they would be widely known throughout a signing community, essentially individual (as opposed to dialectal) in nature, and normally irrelevant to communication.

The attempt here was to approximate what signers themselves would recognize as being "identical" signs, i.e. pronounced alike in all respects that they would notice. In this attempt I may have artificially raised the percentages of identical signs; this should be borne in mind when interpreting the results. Nevertheless, this is not a great problem in comparing these results to other studies, since lexical similarity is much more commonly reported than lexical identity, and since I later calibrated the results by using the same method to measure lexical identity in English (see section 2.3).

Finally, asking for signs using Spanish occasionally created some confusions. For example, in response to sí 'yes', some people provided the sign that means si 'if'. Where I could clearly establish that confusion had arisen between two distinct signs with similar Spanish glosses, I scored each sign as a different word. When one source of a pair gave one sign, and the other gave a different one, I treated this as if one or both sources did not provide a sign, i.e. no comparison could be made. Finally, when a Spanish word seemed to have no good MSL equivalent, indicated by confusion and uncertainty by more than one signer, that word was eliminated from the list for all sources.

2.2 Results

The number of words available for comparison between each pair of dialects is given in Table 1. The abbreviations used are as follows:

Dictionaries:

MPS	Mis Primeras Señas, Mis Primeras Señas 2
PP	Parra and Parra 1986
HEN	Henson 1983
LGM	Luna Guzmán and Miranda 1987

Signers:

HMO	native Hermosillo
H/MX	Hermosillo, with background in Mexico City
CUE	Cuernavaca
MXO	Older signer from Mexico City
MXY	Younger signer from Mexico City

The main, triangular portion of the table shows figures for pairs of dialects, indicating the number of words that were available for comparison for each pair. The total number of words available from each source individually is given as the last line in the table. For

example, 53 words were available in MPS, of which 47 were also found in PP, 48 in HEN, 45 in LGM, etc.

TABLE 1: Words available for comparison between each pair of MSL sources, and total number of words available from each source

MPS	--								
PP	47	--							
HEN	48	64	--						
LGM	45	59	80	--					
HMO	37	46	58	57	--				
H/MX	16	24	31	30	--	--			
CUE	52	66	87	83	61	31	--		
MXO	52	67	90	86	63	33	94	--	
MXY	52	69	90	87	65	33	92	96	--
	MPS	PP	HEN	LGM	HMO	H/MX	CUE	MXO	MXY
Total	53	69	91	88	66	35	94	98	99

Table 1 is provided so the validity of later statistics can be evaluated. The more words available for comparison, the more likely the later statistics are accurate representations of the language as a whole. In most cases, at least 50 words were available for comparison between any two sources. It would have been much better to have 100 words available for any pair of dialects, but this was not possible given that many of the sources were published dictionaries, each of which included a different sampling of the vocabulary of the language. Further, because of having to use two different sources in Hermosillo (HMO and H/MX), neither of these sources includes the entire 100 words.

Table 2 lists the percentages of lexical similarity for each pair of sources. The bottom line of the table lists the average percentage of similarity of each source with all other sources.

TABLE 2: Percentage of lexical similarity between each pair of MSL sources, and average percentage of similarity of each source with all other sources

MPS	--								
PP	98	--							
HEN	94	95	--						
LGM	96	95	92	--					
HMO	97	96	93	91	--				
H/MX	100	100	94	97	--	--			
CUE	96	94	94	92	97	90	--		
MXO	90	94	91	87	94	85	94	--	
MXY	98	97	97	94	95	97	97	92	--
	MPS	PP	HEN	LGM	HMO	H/MX	CUE	MXO	MXY
AVG	96	96	94	93	95	95	94	91	96

Except in two cases, all percentages are above 90%. The two exceptions both involve the same signer, MXO, who also has the lowest average similarity with other sources. He was also the only older signer I consulted, and was older than the sources MPS used. This tends to reinforce the hypothesis that age is a significant factor in dialect variation.

Still, the percentages here are all extremely high. Swadesh (1950) suggests using 85% as the minimum amount of lexical similarity required for classifying two dialects as subdialects of the same language.[8] Among the various Romance languages, lexical similarity ranges between 70% and 90% (Rea 1958). Even though the number of words available for comparison in MSL is less than ideal, the consistency with which lexical similarity is above 90% suggests strongly that the different sources are

[8]To be more precise, Swadesh (1950:163) adopts the criterion that two dialects with a time depth of 0.5 units or less be considered to be part of the same language. According to the formula he used to calculate time depths, this translates to 85% cognates, which I am here equating to lexical similarity (even though cognate counts are somewhat more precise than lexical similarity counts based only on inspection).

subdialects of the same language, rather than separate languages. (However, lexical similarity is not a guarantee of intelligibility, i.e. the ability of one dialect to understand another; this matter is discussed in more detail in section 3.3.)

On the other hand, there is a significant amount of minor variation between sources, as shown in the measures of lexical identity in Table 3. When exact details become important in the comparison, rather than just the major outlines of the sign, percentages drop to between 50% and 85%. (The one case of 94% identity between H/MX and MPS should probably be ignored, since only 16 words were available for comparison in this case.)

TABLE 3: Percentage of lexical identity between each pair of MSL sources, and average percentage of identity of each source with all other sources

MPS	--								
PP	79	--							
HEN	67	63	--						
LGM	76	66	54	--					
HMO	81	70	60	60	--				
H/MX	94	83	61	70	--	--			
CUE	85	74	57	61	75	74	--		
MXO	71	69	57	58	65	70	69	--	
MXY	83	80	61	68	78	82	80	72	--
	MPS	PP	HEN	LGM	HMO	H/MX	CUE	MXO	MXY
AVG	80	73	60	64	70	76	72	66	76

Although it is not known to what extent these differences would interfere with intelligibility, they probably do not, as they are comparable to what can be found in a diversified English-speaking community, as shown in section 2.3. Further, Bob Johnson (personal communication) reports that the deaf people he knows exhibit a comparable amount of variation in vocabulary and pronunciation, and use

it playfully in conversations; only rarely do differences like this interfere with communication, and then only minimally.

Taken together, Tables 2 and 3 indicate that the variation to be found in MSL is not primarily due to differences in vocabulary, since (as Table 2 shows) essentially the same words are used by all sources. What does vary is the exact manner in which those words are pronounced. That is, most variation in MSL appears to be phonological in nature, not lexical.

This means that Table 3, which measures phonological variation, gives a better idea than Table 2 of the relative linguistic distance of each source from the other sources. As in Table 2, MXO is one of the most divergent. HEN and LGM are also quite divergent; these are discussed later. On the other end of the scale, MPS apparently has more in common with other sources than any other source, possibly reflecting an attempt on the part of its compilers to provide a representative sampling of signs usable in schools throughout the Republic. Similarly, PP has much in common with other dialects, probably due to their use of the most common sign where there were dialectal variations. The other "central" dialect, H/MX, is that of a merchant who has travelled considerably within Mexico. However, before assuming that these sources somehow represent "standard" forms of the language, note that the number of signs available for comparison in each (Table 1) is relatively low; the high lexical identity figures in Table 3 may have arisen because words that vary frequently from one dialect to another were not available for comparison (either by chance, by deliberate selection on the part of the authors of MPS and PP, and/or by the fact that only 35 words were obtained from H/MX).

2.3 Comparison to English

In order to have a further basis for interpreting the lexical similarity and identity scores for MSL, I used the same methodology to survey English. The purpose was to provide a standard of comparison against which to judge the results of the MSL survey. In particular, since wordlist data collected by someone who doesn't know the language is subject to many types of error, I wanted to discover what results might be typical when it was impossible to sort out these errors, as is normally the case in surveys of little-studied languages. Therefore, I approached a survey of English dialects as much as possible in the same way I approached the MSL survey.

The same 100 words were gathered from four native English speakers, from Minnesota, Nebraska, northern Georgia, and central California. All could communicate with each other with no difficulty, and there was no question that they shared the same language (although they showed considerable dialectal variation, i.e. they had noticeably different accents).

The same wordlist was used as with MSL; words were presented in Spanish and the speaker was asked to provide the corresponding English word. Their fluency in Spanish was minimal to moderate, approximately the same ability in Spanish as the sources of MSL data.

Data was scored using the same principles that I used for MSL. Apparent cognates were scored as similar, in virtually all cases these are items that native speakers of English would identify as being variant pronunciations of the same word. In order to accurately simulate the types of error that may have occurred in surveying MSL, I avoided using knowledge that I possessed about English. For example, I scored two items as dissimilar even when I knew them to be synonyms, and even though all speakers in the study would understand both. I scored two items as nonidentical if they were pronounced differently, even though I knew that they were alternative pronunciations of the same word. However, I did discount certain differences that I knew I had not transcribed with consistent accuracy (such as vowel length, and voicing of stops at the beginnings and ends of words), and minor differences in vowel quality; this is analogous to the phonetic details that I ignored in the MSL survey.

The total number of words available for comparison between each pair of languages is shown in Table 4; this corresponds to Table 1 for MSL. The percentages of lexical similarity and identity are shown in Tables 5 and 6; these correspond to Tables 2 and 3.

TABLE 4: Words available for comparison between each pair of English sources, and total number of words available from each source

MN	--			
NB	98	--		
GA	98	99	--	
CA	97	98	97	--
	MN	NB	GA	CA
Total	99	100	100	98

TABLE 5: Percentage of lexical similarity between each pair of English sources, and average percentage of similarity of each source with all other sources

MN	--			
NB	96	--		
GA	94	94	--	
CA	91	95	93	--
	MN	NB	GA	CA
AVG	94	95	94	93

TABLE 6: Percentage of lexical identity between each pair of English sources, and average percentage of identity of each source with all other sources

MN	--			
NB	67	--		
GA	57	61	--	
CA	66	56	49	--
	MN	NB	GA	CA
AVG	63	61	56	57

Note that the results are approximately what we would expect, based on informal assessments of the dialect differences. Lexical similarity (Table 5) is all above 90%, in accordance with standard assumptions that lexical similarity is above 80–85% between two dialects of the same language. Lexical identity is quite a bit lower, as expected. However, it is somewhat surprising that lexical identity between MN and NB was only 67%, since these are both classified as midwestern dialects. Nevertheless, MN and NB are closer to each other than to other dialects,

and each has more in common (on the average) with the other three dialects than GA and CA do. These facts show that the survey method used has at least a certain amount of validity.

Still, it was clear in scoring the English that the results of this type of survey should not be relied on as if they gave direct information about dialect variation. Rather, they give an approximate measure which is subject to various types of error. For example, when two people provide dissimilar words, there is no easy way in a preliminary survey to determine whether the two words are synonyms (recognized and used by both people) or genuine dialectal differences. When words from different speakers are similar but not identical, there is no way to determine whether the differences would interfere with intelligibility. (Many of the differences contributing to the low identity score of MN and NB were of this type.) And, there are always errors in transcription, misunderstandings as to what word is expected, etc., that arise because the linguist does not know the language well enough to avoid them.

Assuming that the errors in surveying English approximated those that certainly existed in surveying MSL, we can now compare the results of the MSL survey to the English survey to see if the method used provides any evidence about whether MSL is one language or a cluster of closely related languages. Lexical similarity of the different MSL sources is for the most part the same as the four English sources. Lexical identity scores for English are somewhat lower than those for MSL. Thus, based on the results of this study, MSL appears to be more uniform than English in vocabulary and pronunciation.

3 INTERPRETING THE RESULTS

In this section, I discuss the above results, addressing three issues:

How severe are the dialect differences? Is MSL one language or many?
How reliable are the current results, and what further testing is needed?
What is different about the Monterrey dialect, and how different is it?

3.1 One language or many?

The majority of the evidence available favors the conclusion that MSL is one language, at least for the signers and dictionaries sampled in this study. The variations in word choice (lexical similarity) and actual pronunciation (lexical identity) appear to be less than what can be found in an English speaking community with a moderate amount of dialectal variation. Differences of this degree pose no barrier to effective communication in English, and there is no reason to think they would pose a barrier in MSL. The reports of people who know MSL also

support the conclusion that MSL is one language. Although there are some indications that dialectal differences may be more important than the present study suggests, there is currently no strong evidence for considering MSL to be anything more than a single language.

Of course, such evidence may turn up later. Only a small number of the possible dialects of MSL were sampled. The amount of error due to my minimal knowledge about MSL and the particular survey techniques I used may have skewed the results towards showing less (or more) variation than actually exists. And, two dialects could conceivably have relatively high lexical similarity, but due to differences in grammar, may not be intelligible. These factors should be kept in mind when interpreting the results reported here.

Despite these possible problems, this study provides the best information currently available about dialectal variation in MSL. In light of it, how are we to understand the informal reports about whether MSL is or is not a single language? Recall that those who know MSL tend to regard it as a single, unified language, while those who do not know it tend to disagree, being acutely aware of all the variation they have seen in it. The truth about the language probably lies somewhere between these two extremes.

On the one hand, there is some possibility that the differences may be greater than signers realize. Face-to-face communication provides opportunities for bridging language barriers that are outside the language itself. This is especially true in sign languages, which can easily use mime and mime-like gestures in place of established vocabulary, and there is almost always the opportunity to finger-spell a word to explain the meaning of a sign. Further, if a word is not understood, clarification can be sought immediately, and misunderstandings cleared up. Such opportunities would not exist if the message was videotaped, for example, or if a person was watching a conversation that he was not actively participating in. As noted above, there are informal reports of difficulties in understanding in precisely these situations. It is conceivably possible that two people might not be able to understand each other's dialect of MSL, but still be able to communicate well, by taking advantage of those parts of the language they have in common, along with other techniques that are outside the language.

Thus, the problem with informal reports about ability to communicate is that they do not adequately separate actual linguistic intelligibility from the general ability to communicate. Yet, it is intelligibility, not ability to communicate in spite of linguistic differences, which is important for determining whether two varieties of signing are one language or two. And, it is intelligibility which must be used for making decisions about how written and videotaped materials should be prepared, since there is no opportunity for the listener to ask for clarifications from a videotape or a book.

On the other hand, there is apparently a strong tendency for outsiders, especially hearing people, to overreact to the disagreements they see about the "proper" way to sign. Until a person has studied dialect variation closely, one doesn't normally realize that variation to the extent found here for MSL and English is normal. There is no reason why MSL must have just one sign for any given Spanish word, and there is no reason why everyone needs to sign every word exactly the same way. As long as everyone recognizes all the different signs in use in a linguistic community, they can be said to share a common language. The lexical comparisons suggest that most of the arguments that have taken place have been about relatively minor matters, and do not reflect a lack of a common language. After all, people couldn't have had such violent arguments if they didn't have a common language to disagree in!

All in all, the lexical data support the view of signers that MSL is a single language more than they do the view of non-signers. And, since signers know more about their language than non-signers, it seems wise to weigh their judgment more heavily. Despite some possible areas of nonintelligibility that need to be investigated, the best course at present would be to consider MSL as one language.

3.2 Need for intelligibility testing

There are many methods that have been proposed for determining whether two forms of speech represent separate languages or simply subdialects within the same language. B. Grimes (1988) reviews a great number of them, and argues strongly that the only really adequate method is intelligibility testing such as that described by Casad (1974). In intelligibility testing, tapes recorded in one dialect are played for speakers in another dialect. Simple questions are asked about the contents of the tape, and based on the accuracy of the responses, percentages of intelligibility between the dialects are computed. Such testing has been extremely valuable, for example, in identifying the dialects of the indigenous spoken languages of Mexico (Egland, Bartholomew, and Cruz Ramos 1983). The advantage of this method is that it provides a direct measure of the ability to communicate using a language, which intuitively should be the most important criterion in deciding if two dialects are part of the same language.

The correlation between intelligibility testing and lexical similarity scores (like those reported in Tables 2 and 5) is not very high. Among languages with 80% lexical similarity, for example, intelligibility scores ranging between 30% and 79% have been reported. The reason for this variation is that intelligibility is dependent on more factors than just shared vocabulary; systematic differences in pronunciation or grammar can interfere with intelligibility even when lexical similarity is high.[9]

[9]Lexical similarity is a good predictor of intelligibility only when it is low; in this case intelligibility is also low (J. Grimes 1988).

B. Grimes (1988) argues that since ultimately the ability to communicate (intelligibility) is what is important, and since lexical similarity tests at best provide only approximate measures of intelligibility, decisions about whether two dialects represent separate languages or just subdialects of the same language should not be made until after intelligibility testing is done. And, as we have seen above, there is a possibility that face-to-face encounters may hide difficulties in understanding other dialects; again intelligibility testing, using videotaped materials, would separate linguistic intelligibility from general ability to communicate.

Therefore, the conclusions reported in this study should be regarded as only tentative and preliminary. Although both the high lexical similarity figures and the informal reports of deaf people indicate that MSL is most likely a single unified language, intelligibility testing is needed to settle the matter firmly. This information is particularly important for making decisions about which dialect or dialects to use in written, televised, or videotaped materials.

3.3 How different is Monterrey?

Because of the high visibility of the Monterrey dialect (due to the publication of Henson's dictionary), it is important to discuss it in detail. Further, the figures reported here for lexical similarity between Monterrey and Mexico City are higher than the one reported by Smith-Stark (1986). Based on data gathered from Leonardo Arroche (one of the primary contributors to MPS) and compared to HEN, he found 80% apparent cognates. The comparable figures in the present study, in Table 2, are in the range of 91-97%, with the similarity of HEN and MPS at 94%.

It is hard to know how to account for this difference. One possible explanation is that Smith-Stark's sample size was somewhat larger; he had 142 pairs available for comparison, compared to my 48. To be sure if the smaller sample size that I had available has skewed my results, a sample of perhaps 200-500 words should be compared.

Another possible explanation is that Smith-Stark may have been stricter than I in classifying a pair of words as "similar"; in general he scored two signs as similar only if they demonstrated "identidad o semejanzas fuertes en por lo menos dos de los tres aspectos principales de la formación de las señas: conformación de las manos, lugar, y movimiento" ("identity or strong similarities in at least two of the three principal aspects of sign formation: handshape, place, and movement"). It may be that I was more lenient than this.

A third possibility is that his sample included many signs with a high amount of semantic motivation. When he eliminated such signs, comparing only those 43 pairs that were more arbitrary, the percentage of similarity rose to 88%. This figure is much closer to mine, and indeed this latter method may be more comparable to the one I used,

since I started from a list that had already eliminated words likely to have high semantic motivation.[10]

Henson (personal communication) has no trouble communicating with people elsewhere in the country, suggesting that whatever differences may exist between Monterrey and the rest of the country are mostly a matter of aesthetics, and not barriers to communication. The present study tends to reinforce this view; the differences between HEN and other sources are no greater than many differences which can be found within Mexico City itself, particularly those involving LGM and/or HMO. Interestingly, too, MXY (who prefers LGM to HEN) actually has about the same lexical similarity with both sources. Although his percentage of lexical identity with LGM is slightly greater than with HEN, both are low compared to his scores on other sources.

We cannot at this time say whether the differences in Monterrey are great enough to classify it as a separate language. The discrepancies between informal reports, Smith-Stark's study, and Table 2 further point out the need for a more precise method of measuring dialectal variation, such as intelligibility testing.

The other difficulty with Monterrey is interpreting the explanations offered by signers in Mexico City for the differences in HEN. Smith-Stark (personal communication) reports that some signers attribute them to influence from ASL on MSL of Monterrey. Yet he found no greater similarity of ASL to Monterrey than to Mexico City. Joseph Mortland (personal communication) reports that other signers believe Henson, a hearing North American missionary, gathered most of his data from a hearing deaf educator that they claim is not in close contact with the deaf community (although she has five deaf siblings). They explain the differences in HEN as inventions by her or Henson. Yet, Henson reports that he relied on her help only in initial stages, and gathered most of his data directly from deaf people. In other words, it is difficult to understand how the explanations mentioned here about HEN could be correct.

One fact in Table 3 sheds light on this issue. This is the average lexical identity of each source with all other sources; HEN scores lower than all other sources on this measure, just below LGM and MXO. On the other hand, the comparable figures for lexical similarity (Table 2) show HEN to be about the same as other dialects. This shows that although Monterrey (like other dialects) does not have much unique vocabulary, there are many minor differences between it and other dialects. This, in turn, further reinforces the conclusion that the differences in Monterrey are not due to borrowing from ASL or

[10]It is a mystery why lexical similarity should increase when semantic motivation is diminished. Perhaps it is because greater lexical variation can be tolerated when a sign has an obvious meaning. When the meaning is less obvious, more demand is placed on pure memory without mnemonic aids, and it is more important that everyone use the same sign if communication is to proceed smoothly.

inventions by hearing people. Rather, they are more like the regular differences in pronunciation between different dialects of Spanish.[11] At any rate, until this issue can be investigated further, it seems best to assume that HEN's reports about the signs used by the deaf in Monterrey are accurate.

Although attempts by native speakers to explain the differences between Monterrey and Mexico City do not appear to be correct, they do suggest that Henson's dictionary is not well accepted in Mexico City, and that outlying dialects like Monterrey may have lower prestige, at least in the eyes of people in Mexico City. Prestige factors like this need to be investigated more thoroughly before attempts are made to describe any "standard" form of MSL, prepare materials for teaching, or develop literature (either written or videotaped).

4 RECOMMENDATIONS ABOUT LANGUAGE PLANNING

The impetus behind this study has come from linguists, educators, missionaries, and social service agencies who need to know about MSL's status in order to conduct their professional activities. Their concerns have included the following, all of which can be considered part of "language planning":

Where should programs of linguistic research be conducted in MSL, and how many distinct programs will be necessary?

How can deaf people achieve their desire to have increased public and governmental support for deaf services, and especially increased acceptance of MSL as an important language of the Republic?

Assuming that support for teaching MSL to deaf children can be obtained, what form of MSL should be taught? Is there a standard form which could be promoted throughout the entire country? Should there be any attempt to make MSL more like Spanish, under the assumption that this will facilitate the learning of Spanish?

What form of MSL is most useful for communication throughout the Republic? Is there a standard dialect which can be used for television broadcasts, videotapes, and perhaps even written materials (providing a suitable writing system could be developed)?

How can deaf service agencies best meet the needs of deaf Mexicans in the USA?

In this final section, I would like to suggest ways of answering some of these questions.

There are two proposals commonly made for sign languages which seldom work as well as their proponents would like. One is to promote

[11] E.g., 'z' is pronounced 's' in Mexico but like English 'th' in Spain.

a type of sign language that follows closely the grammar of the dominant oral language. The other is to pick one form of the language as standard, and try to promote it above all others.

The general problem with these two approaches is that it is extremely difficult, if not impossible, to promote change in a linguistic community by means of education or legislation. Educators and government officials don't have enough influence to be able to change linguistic habits that are well entrenched; people are going to go on speaking or signing the way that is most comfortable, because almost everyone is primarily concerned with communicating information, and cares very little about following some sort of "standard". If people get their point across, that is sufficient. Efforts of educators and legislators in many languages over hundreds of years have done little to change this situation. This is especially true when the efforts to change the language proceed from outside the linguistic community, as would be the case with MSL.

There are special problems when signed versions of spoken languages are invented. These forms of signed communication use the grammar of some spoken language combined with vocabulary drawn from a sign language, inventing signs when there are no direct equivalents for a particular word in the spoken language. There is a fair amount of evidence that such systems are awkward, unnatural, and not very useful as communicative tools. Due to this awkwardness, they quickly evolve into something much more flexible and useful. Klima and Bellugi (1979) document such changes in the history of American Sign Language (and earlier in Old French sign language). This has resulted in major differences between ASL and MSL, even though they are both descended from Old French Sign Language only a century ago (Smith-Stark 1986). Rapid change such as this can be attributed to the instability of signed versions of spoken languages. Johnson, Lidell, and Erting (1989:8-9) cite work by S. Supalla (1986) which demonstrated that even in an ideal environment for learning Signed English, deaf children did not sign in the same way as their adult models. They point out (p. 5) that signed versions of spoken languages are not natural languages, in that they do not develop naturally in a community of language users, they are taught in schools rather than being acquired by a child in the normal context of everyday life, and what grammatical organization they have is entirely dependent on another language rather than being derived from their own internal dynamic. Deaf people almost always prefer a pure sign language, rather than a signed spoken language, when they are communicating among themselves. All this suggests that any attempt to invent such unnatural languages is doomed to fail, because they cannot and will not be transmitted naturally.

The worst part of introducing a signed spoken language is that it does not improve the linguistic situation, but complicates it, by placing two signing systems in competition with each other. Children trained in the newer system may not be able to communicate with older deaf people, due to the differences in syntax (and often vocabulary) between

the two signing systems. Children who attempt to acquire it will change it to make it more natural, and different schools may change it in different ways, leading to a variety of new languages, rather than a single standard.

Note that a similar problem also develops with Total Communication, when signed and oral languages are used simultaneously, since there is a strong tendency to adjust the syntax of the signed language to match that of the spoken one. Moreover, Johnson and Erting (in press, cited in Johnson, Liddell and Erting 1989:5-6) have demonstrated that a teacher's signing in a Total Communication environment is typically severely degraded, and only partially intelligible at best; whatever total communication is, it is not a natural sign language. The current emphasis on Total Communication in the United States has seriously hampered the ability of deaf people to communicate with each other (Bob Johnson, personal communication).

Trying to standardize a language (whether signed or oral) likewise has its problems. First, there is a danger of "over-standardizing" it, attempting to create more uniformity than is normal. For example, only one word may be allowed for a given concept, whereas natural languages normally have abundant synonyms, each with its own subtle shades of meaning and usage. Eliminating synonyms does not make a language more useful, but less; it impoverishes it. And, what is true for synonyms is also true for pronunciation; as we saw above with English, it is not unusual for half of the vocabulary to be pronounced differently by any two people.

To some extent, one can avoid the danger of overstandardization by choosing an actual dialect that is already in use by some people. Then, however, the question arises of which dialect to choose. If one dialect clearly has more prestige than all the rest, people will want to learn it with little outside prodding. Attempts at promoting the use of a prestigious dialect can be quite successful. However, if there is no clear consensus as to which dialect is "best", if people in each dialect think their own is best, then attempts to enforce conformity will be resented, resisted, and are almost certainly doomed to fail.

At this point, there have been no careful studies about such attitudes in MSL, but the evidence available suggests that a fair amount of interdialectal rivalry develops whenever there are attempts to define (or overdefine) a standard form of MSL. I mentioned earlier the numerous incidents in which a group of deaf people was put in a situation of having to demonstrate that their language was unified, and quickly got into arguments about which words were "correct". These arguments seem to have developed because of a false assumption that everybody needs to use exactly the same words in all cases for a language to be unified. Their intensity points to the pride each person has in his own way of signing, and the unlikelihood that they would accept any "standard" that did not include their own dialect as one option. Further, incidents were reported to me between older and

younger speakers in which each expressed disfavor with the signing of the other group, the older signers being characterized as being old-fashioned and inflexible, the younger ones as disrespectful.

Bear in mind that I am not trying to divide the deaf community in pointing this out; the sentiments expressed are no greater than what would arise in a discussion about dialects in English. The actual differences are apparently minor, and do not impede communication. The important point is that each person feels very strongly that their way of signing is good. Any attempt at promoting a standard which does not clearly allow for individual and dialectal variation will most likely promote strong dissention within the deaf community, rather than helping unite it.

What then, should be done? I strongly recommend that if anything is to be done by hearing people to influence the deaf community's use of MSL, it should be to promote bidialectalism, rather than an artificially restrictive standard, Total Communication, or a signed version of Spanish. By "bidialectalism", I mean the ability to communicate effectively with people of other dialects, despite sometimes substantial differences. Bidialectalism, like bilingualism, is learned behavior, but since the amount to be learned is less, it can be acquired in a matter of weeks instead of years.

To some extent, bidialectalism may already exist, as deaf people report being able to communicate despite the differences in dialects. Still, this communication takes place face-to-face, so that misunderstandings can be quickly repaired; to be fully mature, bidialectalism would need to extend to such things as comprehension of television programs and video tapes. As noted above, we do not know to what extent bidialectalism such as this exists; this can be assessed better after intelligibility testing is done.

To promote bidialectalism, all that needs to be done is to bring people together in situations where they want to communicate. This could include social activities, organized sports, projects that would benefit the deaf community, etc. People will take care of the rest; they will learn each others' dialects without any need for expensive and elaborate projects to standardize the language.

Of course, much of this is happening already. What needs to be done is to identify groups of people that don't normally communicate with each other, and bring them together. A certain amount of linguistic and sociolinguistic research is helpful in identifying the nature and extent of dialectal differences, but people have been bridging linguistic gaps for hundreds of years without help from linguists and educators. Further, promoting communication within the deaf community is something that deaf people can do very well themselves, without specialized professional training. Indeed, they can probably do it better than hearing people can. The more that deaf people get involved in promoting communication between different

subgroups of the deaf community, the more likely that a consensus language will grow which will be a synthesis of all current varieties of MSL, rather than a single restrictive or artificial variety.

It bears repeating that initiatives should arise from within the deaf community itself. These will be more likely to succeed than efforts by hearing outsiders. For example, LGM is better accepted by deaf people than HEN; one factor in this is probably that the authors of LGM are both deaf. Videos, television programs, and written materials should be developed by deaf people themselves, and should represent the way they actually sign, not any artificially imposed standard. If necessary, these materials could be accompanied by a short explanation of words or expressions that might be unfamiliar to some people, so as to promote understanding of a particular dialect within a wider community. And, a variety of dialects should be presented in such materials: young and old, Mexico City and elsewhere, rich and poor, etc.

Promoting bidialectalism would be easier if a practical writing system could be developed which was less clumsy and more precise than drawing pictures. This, unfortunately will probably have to wait until more is understood linguistically about the language. Boris Fridman has made considerable progress in this regard, but his work is not yet published. The Sutton system that was used in this study could form a good basis for such a system, but it is not the only one available, and the actual choice of an overall writing system should probably be made by deaf people themselves. That is, linguists can point out what details need to be written, and make suggestions on how to write them, but it is usually best if native speakers make the final decisions. Further, getting deaf people from a variety of backgrounds together to work on a writing system could be one of the encounters that promotes bidialectalism.

With regard to the needs of deaf service agencies in the United States, interpreters should definitely be trained in MSL who can assist Mexican deaf in their life in the USA, and guide them into learning American Sign Language. It probably doesn't matter what dialect of MSL is used to train interpreters; the language seems uniform enough that once someone learns one dialect, communicating with other dialects is not a great problem. Indeed, familiarity with a variety of dialects would be a distinct advantage.

Appendix: words used as a basis for this study

seis	six
siete	seven
ocho	eight
nueve	nine
diez	ten
familia	family
madre, mama	mother
padre, papa	father
esposo	husband
novio	boyfriend, fiance
hermano	brother
hijo	son
abuelo	grandfather
nieto	grandson
tio	uncle
niño	child
hombre	man
mujer	woman
amigo	friend
profesor	teacher
sordo(mudo)	deaf
policía	police
ley	law
sangre	blood
carne	meat
vivir	live
morir	die
fuerte	strong
débil	weak
preguntar	ask
¿que?	what?
¿quien?	who?
¿cuando?	when?
¿cuanto?	how much?
¿donde?	where?
no	no
sí	yes
si	if
dia	day
noche	night
sol	sun
luna	moon
lluvia	rain
casa	house
ciudad	city
dinero	money
comprar	buy
vender	sell

pagar	pay
rico	rich
piedra	rock
agua	water
tierra	land
montaña	mountain
árbol	tree
trabajar	work
ayudar	help
gracias	thank you
entender	understand
mosca	fly
ratón	mouse, rat
bueno	good
mal	bad
bien	well
nuevo	new
viejo	old (person)
joven	young (person)
limpio	clean
sucio	dirty
pelea	fight
fuego	fire
color	color
blanco	white
negro	black
rojo	red
azul	blue
verde	green
español	Spanish
inglés	English
nombre	name
historia	story, history
sueter	sweater
calor	heat
dios	god
diablo	devil
pecado, pecar	sin
confesar	confess
creer	believe
rezar, orar	pray
sacerdote	priest
paz	peace
amable	kind
enojado	angry
feliz	happy
triste	sad
frijoles	beans
manzana	apple
maíz	corn
dulce	sweet

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